



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,763	09/26/2003	Yukihisa Takeuchi	789_117	9308

25191 7590 01/11/2006

BURR & BROWN

PO BOX 7068

SYRACUSE, NY 13261-7068

EXAMINER

PERRY, ANTHONY T

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,763

Applicant(s)

TAKEUCHI ET AL.

Examiner

Anthony T. Perry

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 3, 12-22, 24 and 34-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 7-11, 23, 26, 27 and 29-33 is/are rejected.
- 7) ☒ Claim(s) 3, 6, 25 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/26/03-9/01/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 3, 12-22, 24, and 34-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/05/05.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 11, 23, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Kastalsky et al. (US 6,614,149).

Regarding claims 1, 11, 23, and 33, Kastalsky et al. disclose a light emission device comprising an electric field receiving member (120) made of a dielectric material (glass substrate), which is an electrostrictive material (see Fig. 1b). The device has a first electrode (140) and a second electrode (310) on the upper surface of the field receiving member (120), wherein the two electrodes define a slit. The second electrode (310) has a fluorescent layer (195) disposed on it. Kastalsky teaches a display that uses a two-dimensional array of the light emission devices (see for example claim 18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-10 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastalsky et al. (US 6,614,149).

Regarding claims 7-10 and 29-32, Kastalsky discloses the claimed invention except for the specifically reciting the range for the width of the slit. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Furthermore, Kastalsky teaches that the width of the gap between the emitter (140) and the electrode (110) is preferably in a range of 1 micron or less so as to be able to reduce the voltage required to drive the device (see for example col. 3, lines 28-32). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a range for the width of the slit between the first electrode (140) and the second electrode (310), since optimization of workable ranges is considered within the skill of the art, and Kastalsky teaches minimizing the width of the slit allows for a low voltage difference between the electrodes.

Claims 4 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastalsky et al. (US 6,614,149) in view of Shibata (US 6,586,872).

Regarding claims 4 and 26, Kastalsky does not specifically teach the first electrode or second electrode having a concavity or convexity. However, Shibata teaches the first electrode

Art Unit: 2879

being convex in shape and the second electrode being concave in shape (see Fig. 2c). This type of configuration is well known in the art and is used often as a way to increase the surface area of the opposing electrodes so as to provide a larger area for electron emission. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the first electrode with a convex shape and the second electrode with a concave shape so as to increase the electron emission efficiency of the device.

Claims 5 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastalsky et al. (US 6,614,149).

Regarding claims 5 and 27, Kastalsky teaches a land (110) disposed in the slit in such that it is electrically insulated in relation to the first electrode (140) and second electrode (310). Kastalsky teaches that the land (110) and the second electrode (310) being formed of the same conductive material, for example, aluminum (See for example col. 2, lines 52-59). Kastalsky does not specifically recite the material of the layer (160) of the first electrode (the emitter). Kastalsky simply refers to it as a conductive layer. It would have been obvious to one of ordinary skill in the art to have used the same material, for example, aluminum, for the all three conductive layers so that can be formed by a single printing process with the use of a mask.

Claims 5 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastalsky et al. (US 6,614,149) in view of Sasaguri (US6,583,553).

Regarding claims 5 and 27, Kastalsky does not specifically teach a pinhole defined in one of the first and second electrodes. However, Sasaguri teaches a pinhole (7) defined in the first electrode (4) (see Fig. 16B). Sasaguri teaches that by providing the pinhole in the electrode that the electron emission efficiency can be increased (see for example col. 14, lines 40-53).

Art Unit: 2879

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a pinhole in the first electrode of the Kastalsky device in order to increase the electron emission efficiency of the device.

Allowable Subject Matter

Claims 3, 6, 25, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- The electric field receiving member having a dielectric constant of more than 1000, in combination with the remaining claimed limitations as called for in claim 3 and 25;
- One of the first electrode and second electrode having a circular shape and the other having an annular shape wherein the slit formed between them has annular shape in combination with the remaining claimed limitations as called for in claim 6 and 28.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (571) 272-2459. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.


Art Unit: 2879

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-24597. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Perry
Patent Examiner
Art Unit 2879
January 9, 2006



Mariceli Santiago
Primary Examiner
Art Unit 2879